Performance Work Statement (PWS)
High-Resolution Three-Dimensional Geospatial Information Operations & Technology Integration
(HR3DGI O&TI)

03 June 2016

1. General Information

The following Performance Work Statement (PWS) supports the High-Resolution Three-Dimensional Geospatial Information Operations and Technology Integration (HR3DGI O&TI) program in support of the operation of six manned airborne Buckeye Classic LIDAR/EO collection systems, one manned airborne Buckeye II LIDAR/EO collection systems, one unmanned aerial Buckeye Classic LIDAR/EO collection system, and one terrestrial LIDAR/EO collection system. This work supports the collection, processing, dissemination, storage, and maintenance of high-resolution three-dimensional (3D) geospatial information by conducting flight and terrestrial collection operations and by processing and producing the required high-resolution 3D geospatial data products over all operationally relevant portions of the Earth.

1.1 Description of Services/Introduction

The contractor shall provide all personnel, equipment, supplies, facilities, transportation, tools, materials, supervision, and other items and non-personal services necessary to perform the HR3DGI O&TI support task as defined in this PWS, except for those items specified as government-furnished property, services, and information.

C.1 BACKGROUND

Insufficient high-resolution three (3) dimensional (3D) geospatial information (HR3DGI) of the battle-space limits the capacity to conduct warfare planning. These insufficiencies also limit the ability to detect, identify, locate, and track high-value targets and to effectively process strike capabilities for rapid deployment and execution. The warfighter's requirement for high-resolution terrain data has grown exponentially as has the requirement for accurate, timely high-resolution 3D elevation and imagery data to support current and future operations. High-resolution 3D geospatial information provides the foundation data necessary to produce geospatial products that provide the force multiplier necessary for successful operations.

The purpose of this effort is to collect, process, disseminate, store, and maintain high-resolution 3D geospatial information by conducting flight operations and terrestrial collection operations and by processing and producing the required high-resolution 3D geospatial data products over all operationally relevant portions of the Earth.
In addition, the Department of Defense is pursuing advancement in Light Detection and Ranging (LIDAR) sensor technology. This is a result of the operational requirement to provide high fidelity terrain mapping from a higher altitude, higher velocity aircraft platform (to reduce risk from adversary fire). Department of Defense requires advancement in supporting LIDAR collection, data processing, storage, and dissemination technology. Current LIDAR collection systems are rapidly improving/increasing area collection rates as well as increasing the geospatial fidelity of the data. In order to keep pace with the improving collection systems, improved data processing needs to be developed and tested.

1.3 Objectives

The objective of this effort is to collect, process, disseminate, store, and manage airborne and terrestrial LIDAR and EO data to support the warfighter as a force multiplier for successful operations.

1.4 Scope

This PWS defines the requirements for contractor-provided services necessary to support the HR3DGI program. These services cover all program requirements, including Personnel; Materials; Manned Fixed Wing Platform Collection and Processing; Unmanned Aerial Platform Collection and Processing; Terrestrial Platform Collection and Processing; Dissemination, Storage, and Maintenance; Mobilization and Demobilization; and all necessary Program Management responsibilities, which include Meetings, Deliverables, Schedules, Configuration Management, Personnel Management, Risk Management, Quality Control, Security, and Overall Program Compliance.

1.5 Period of Performance:

The period of performance is as follows: twelve (12) month base period with four (4) twelve (12) month options, with a total period of performance of five (5) years. General areas of interest will be Southwest Asia; Northern, Central and Eastern Africa; and Asia-Pacific/Southeast Asia.

1.6 General Information

1.6.1 Quality Control

The contractor shall use quality control (QC) and quality assurance (QA) procedures to ensure proper oversight for personnel, training, facilities, equipment, supplies, services, and subcontractors.

1.6.2 Quality Assurance

The government will evaluate the contractor's performance under this contract in accordance with the Quality Control Plan (QCP). This plan is primarily focused on what the government must do to ensure that the contractor has performed in accordance with the performance standards. It defines how the performance standards will be applied, the frequency of surveillance, and the minimum acceptable defect rates.

1.6.3 Government Remedies

The Contracting Officer will follow Federal Acquisition Regulation FAR 52.246-5 Inspection of Services -- Cost-Reimbursement (Apr 1984) for a contractor's failure to perform satisfactory services or failure to correct nonconforming services.

1.6.4 Recognized Holidays

Below is a list of federal holidays to be observed by contractor CONUS-based personnel:

New Year's Day

Martin Luther King Jr.'s Birthday

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

1.6.5 Hours of Operation

For the portions of this effort that are conducted in the CONUS under what would be considered normal circumstances, the contractor shall be responsible for conducting business between the hours of 9 a.m. and 5 p.m., Monday through Friday. For OCONUS support to this effort, normal operating hours will be 24 hours a day, 7 days a week (24/7); and individual employees shall be expected to work 12 hours a day, 7 days a week to support the 24/7 operations.

1.6.6 Security Requirements

1.6.6.1 All security requirements will be addressed in the DD254 that will be issued upon award of the contract. Key personnel will possess TS Sensitive Compartmented Information (SCI) security clearances. Contractor personnel performing work onsite at any of the various processing locations will be required to have a Secret security clearance at a minimum. Support personnel who are responsible for logistical and deployment support will not be required to hold a Secret security clearance.

1.6.6.2 Physical Security

The contractor shall be responsible for safeguarding all government equipment, information, and property provided for contractor use based on direction from the government as applicable.

1.6.7 Special Qualifications

N/A

1.6.8 Post Award Orientation/Periodic Progress Meetings

1.6.8.1 The government will hold a Post Award Orientation Meeting as per FAR SubPart 42.5 after award of the contract.

1.6.8.2 The government reserves the right to hold periodic progress meetings as required.

1.6.9 Contracting Officer's Representative (COR):

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Address: 7701 Telegraph Road, Alexandria, VA 22315

Phone Number: 703-428-7814

Email: guy.m.hardaway@usace.army.mil

Alternate COR:

Name: Brian Hibbeln

Address: 2231 Crystal Drive, Arlington, VA 22202

Phone Number: 703 746-1321

Email: Bahibbel@nps.navy.mil

The COR monitors all technical aspects of the contract and assists in contract administration. The COR is authorized to perform the following functions: assure the contractor performs the

technical requirements of the contract; perform inspections necessary in connection with contract performance; maintain written and oral communications with the contractor concerning technical aspects of the contract; issue written interpretations of technical requirements, including government drawings, designs, and specifications; monitor contractor's performance and notify both the KO and contractor of any deficiencies; coordinate availability of government-furnished property; and provide site-entry of contractor personnel. A letter of designation issued to the COR, a copy of which is sent to the contractor, states the responsibilities and limitations of the COR, especially with regard to changes in cost or price, estimates, or changes in delivery dates. The COR is not authorized to change any of the terms and conditions of the resulting order.

1.6.10 Contract Manager

The contractor shall provide a Contract Manager who shall be responsible for the performance of the work. The name of this person and an alternate who shall act for the contractor when the manager is absent shall be designated in writing to the KO. The Contract Manager or alternate shall have full authority to act for the contractor on all contract matters relating to daily operation of this contract.

1.6.11 Identification of Contractor Employees

All contract personnel attending meetings, answering government telephones, and working in other situations where their contractor status is not obvious to third parties are required to identify themselves as such to avoid creating an impression in the minds of members of the public that they are government officials. They must also ensure all documents or reports produced by contractors are suitably marked as contractor products or that contractor participation is appropriately disclosed.

2. Part 2. Definitions & Acronyms

2.1 Definitions

CONTRACTOR

A supplier or vendor awarded a contract to provide specific supplies or service to the government. The term used in this contract refers to the prime.

CONTRACTING OFFICER

A person with authority to enter into, administer, or terminate contracts and make related determinations and findings on behalf of the government. Note: The only individual who can legally bind the government.

CONTRACTING OFFICER'S REPRESENTATIVE (COR)

A representative from the requiring activity appointed in writing by the KO to perform surveillance and to act as liaison to the contractor.

DEFECTIVE SERVICE

A service output that does not meet the standard of performance associated with it in the PWS.

DELIVERABLE

Anything that can be physically delivered, but may include non-manufactured things such as meeting minutes or reports.

HR3DGI SYSTEM

An airborne or terrestrial vehicle, equipped with the HR3DGI sensors, together with the HR3DGI data processing capability.

KEY PERSONNEL

Contractor personnel who are evaluated in a source selection process. When key personnel are used as an evaluation factor in best value procurement, an offer can be rejected if it does not have a firm commitment from the persons who are listed in the proposal. (See Section C.3.4: The Contractors shall provide three Key Personnel: Program Manager, Chief Engineer, and Chief Pilot.) Also see 52.046-4401 KEY PERSONNEL (FEB 2000)

PERFORMANCE WORK STATEMENT

Statement of work (SOW) for performance-based acquisitions that describes the required results in clear, specific, and objective terms with measurable outcomes.

PHYSICAL SECURITY

Actions that prevent the loss or damage of government property.

PLATFORM

An airborne or terrestrial vehicle.

QUALITY ASSURANCE

Actions taken by the government to assure contracted services meet PWS requirements.

QUALITY CONTROL PLAN (QCP)

A written document specifying the surveillance method used for surveillance of contractor performance.

QUALITY CONTROL

Actions taken by a contractor to control the performance of contracted services to meet PWS requirements.

SUBCONTRACTOR

One that enters into a contract with a prime contractor. The government does not have privity of contract with the subcontractor.

WORK DAY

The number of hours per day the contractor provides services in accordance with the contract.

WORK WEEK

Monday through Friday, unless specified otherwise.

C.2 REQUIREMENTS / TECHNICAL & OPERATIONS TASKS

The Contractor shall provide technical, managerial, logistical, and engineering support and services to support the United States (U.S.) Government in the execution of its HR3DGI

operation and sustainment mission. The contractor shall provide personnel possessing the skills, knowledge, certifications, and training to satisfactorily perform the services required by this PWS. The contractor shall procure and manage all materials, supplies, and services needed to perform the tasks specified in this PWS. The remainder of this section describes the specific subtasks and activities that the Contractor shall conduct. All acronyms are spelled out as follows and are listed as solely the acronym thereafter:

Acronyms

24/7	24 hours a day, 7 days a week
3D	Three Dimensional
ACOR	Alternate Contracting Officer's Representative
AFARS	Army Federal Acquisition Regulation Supplement
AGC	Army Geospatial Center
AGL	Above Ground Level
ALTM	Airborne Laser Terrain Mapper
AOR	Area of Responsibility
AR	Army Regulation
AT	Anti-Terrorism
CCE	Contracting Center of Excellence
CENTCOM	Central Command
CF	Coalition Forces
CFE	Contractor-Furnished Equipment
CFR	Code of Federal Regulations
CLIN	Contract Line Item Number
CMRA	Contractor Manpower Reporting Application
CONEX	Container Express
CONUS	Continental United States (excludes Alaska and Hawaii)
COR	Contracting Officer’s Representative
COTS	Commercial Off-the-Shelf
CRC	CONUS Replacement Center
CWBS	Contract Work Breakdown Structure
DA	Department of the Army
DD	Department of Defense Form
DD250	Department of Defense Form 250 (Receiving Report)
DD254	Department of Defense Contract Security Requirement List
DEM	Digital Elevation Model
DFARS	Defense Federal Acquisition Regulation Supplement
DMDC	Defense Manpower Data Center
DoD	Department of Defense
EO	Electro Optical
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulation
FMC	Fully Mission Capable
FPCON	Force Protection Condition
GCS	Ground Control Station
GeoTIFF	Geographically Tagged Image File Format
GFE	Government-Furnished Equipment
GFI	Government-Furnished Information

GOTS	Government Off-the-Shelf
GPS	Global Positioning System
GS	General Services
GSE	Ground Support Equipment
HAZMAT	Hazardous Material
HIPAA	Health Insurance Portability and Accountability Act of 1996
HITL	Hardware in the Loop
HQDA	Headquarters, Department of Army
HR3DGI	High-Resolution Three-Dimensional Geospatial Information
IA	Information Assurance
IMS	Integrated Master Schedule
ITAR	International Traffic in Arms Regulation
JHU	John Hopkins University
JP2	JPEG 2000
JPG	Joint Photographic Experts Group
KO	Contracting Officer
LAS	LASer File Format Exchange
LIDAR	Light Detection and Ranging
LOA	Letter of Authorization
MD	Maryland
MFW	Manned Fixed Wing
MrSID	Multi-resolution Seamless Image Database
N/A	Not Applicable
NGA	National Geospatial-Intelligence Agency
NITF	National Image Transmission Format
OCI	Organizational Conflict of Interest
OCONUS	Outside the Continental United States (includes Alaska and Hawaii)
ODC	Other Direct Costs
OPSEC	Operational Security
PDSS	Pre-Deployment Site Survey
PIPO	Phase In/Phase Out
PM	Program Manager
POC	Point of Contact
PRS	Performance Requirements Summary
PWS	Performance Work Statement
QA	Quality Assurance
QAP	Quality Assurance Program
QC	Quality Control
QCP	Quality Control Plan
RGB	Red, Green, Blue
SCI	Sensitive Compartmented Information
SOP	Standard Operating Procedure
SOW	Statement of work
TBO	Time Before Overhaul
TE	Technical Exhibit
TM	Technical Monitor
TOT	Time over Target
TPOC	Technical Point of Contact
TS	Top Secret
U.S.	United States

UAS Unmanned Aerial System
USACE United States Army Corp of Engineers
WBS Work Breakdown Structure

3. Government Furnished Items and Services

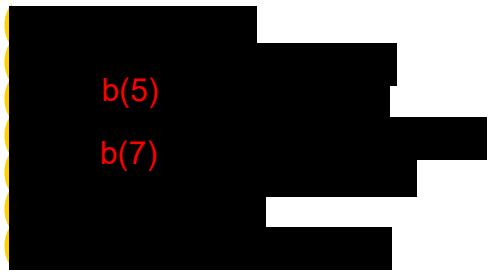
See Section 5.5.1.

4. Contractor Furnished Items and Responsibilities

See Section 5.5.2.

C.2.1 Locations

The Contracting Officer's Representative (COR) will provide to the Contractor the specific locations of interest as Government Furnished Information (GFI) at contract award. These may include up to seven (7) OCONUS locations for the manned fixed wing (MFW) aircraft and one (1) location for the UAS. Presently the government anticipates the following locations based on past experience, but these are subject to change:



The Terrestrial System will operate in a location similar to b(5) and b(7)

C.2.2 Manned Fixed Wing Platforms and Unmanned Aerial Platforms Collection and Processing

The Contractor shall provide technical, management, engineering, maintenance, testing, training, and operational support that include the following**:**

C.2.2.1 Collection

C.2.2.1.1 The Contractor shall operate the GFE Optech ALTM GEMINI and Optech ORION H300 LIDAR systems, KEYW EO 1C+ Framing Camera systems, Sigma Space BE II LIDAR systems, Vision Map EO mapping camera systems, and other advanced-technology commercially-available linear mode LIDAR and EO systems provided as GFE by the government. (Note: these latter sensors are referenced herein as advanced sensors. Examples include the Optech Galaxy LIDAR, the Leica ALS80-HA LIDAR, and the KEYW Aeroptic color imaging sensor (EO).)

C.2.2.1.2 The Contractor shall plan and conduct HR3DGI data collection missions.

C.2.2.1.3 The Contractor shall keep a logbook record of all flights performed.

C.2.2.1.4 The Contractor shall provide the personnel and equipment required to provide the government with a nominal 94 flight hours per month per aircraft for the BE system; 80 hours per aircraft per month for the BE UAS; 120 hours per month per aircraft for the BE system with advanced sensors; and 150 hours per aircraft per month for the BE II system for the duration of the period of performance.

C.2.2.1.5 The Contractor shall maintain an 80% Operational Readiness rate as well as a state of readiness capable of responding to a tasking from the Government within 24 hours.

C.2.2.1.6 The Contractor shall perform collection flights in accordance with the tasking orders received from the Government.

C.2.2.1.7 The Contractor shall accommodate a standard operational flight profile of 8,000 feet (ft) AGL to 12,000 ft AGL for the BE system; 4,000 ft AGL to 8,000 ft AGL for the BE UAS; 12,000 ft AGL to 19,000 ft AGL for the BE system with advanced sensors; and 15,000 ft AGL to 30,000 ft AGL for the BE II system and accommodate mutually agreeable flight profiles outside of these bands based on operational, sensor, and aircraft limitations. The Contractor shall also support specialized BE UAS missions operating at a lower altitude of 3,000 ft AGL.

C.2.2.1.8 The Contractor shall collect 1 m LIDAR and 10 cm EO imagery or better with the manned fixed wing systems, and 50 cm LIDAR and 5 cm EO imagery or better with the BE UAS.

C.2.2.1.9 The Contractor shall collect data at collection rates at least 45 km^2/hour for the BE system; 15 km^2/hour for the BE UAS; 180 km^2/hour for the BE system with advanced sensors, and 250 km^2/hr for the BE II system.

C.2.2.2 Geospatial Data Processing

C.2.2.2.1 The Contractor shall provide LIDAR processing to include the following:

C.2.2.2.1.1 The Contractor shall process airborne LIDAR following established SOPs.

C.2.2.2.1.2 The Contractor shall process the LIDAR data from one sortie in no more than 24 hours for the BE system and the BE UAS, 24 hours for the BE system with advanced-technology sensors; and 36 hours for the BE II system, once the raw sensor data and any required GPS correction data are available at the data processing facility.

C.2.2.2.1.3 The Contractor shall maintain sufficient hardware at OCONUS locations to meet production demands, perform quality control, and maintain lab hardware and software.

C.2.2.2.1.4 The Contractor shall have a capability to process LIDAR data using computer equipment and personnel located at the flight operations base.

C.2.2.2.1.5 The Contractor shall provide LAS point clouds (x,y,z,i) in LAS 1.2 format zipped with LASzip. The Contractor shall ensure the LIDAR point cloud data is tiled as necessary to ensure that the derived LIDAR elevation models are less than 300 megabytes in size for the BE system and BE UAS, and 600 megabytes in size for the BE system with advanced sensors and the BE II system. The Contractor shall ensure the tiles have 10–20 meters of overlap.

C.2.2.2.1.6 The Contractor shall provide DEMs for the LIDAR returns at resolutions approximating the average point cloud spacing data (e.g., manned airborne collected point cloud data at 1-meter average point spacing will be gridded at 1-meter). If supported by the sensor, DEMs for both first and last returns shall be provided. The Contractor shall ensure the DEM files are saved in GeoTIFF 32-bit file format.

C.2.2.2.1.7 For LIDAR sensors that support intensity images, the Contractor shall provide LIDAR intensity images depicting LIDAR reflectivity of the surface topography in grayscale as derived from the LIDAR point cloud tiles. The Contractor shall ensure the files are delivered as 8-bit grayscale GeoTIFF-formatted raster images

C.2.2.2.1.8 The Contractor shall provide bare earth DEMs representing the bare earth terrain as a raster grid in 32-bit GeoTIFF format. The Contractor shall ensure the bare earth tiles match the DEM and intensity image tiles in extent and resolution.

C.2.2.2.2 The Contractor shall provide Electro Optical (EO) processing to include the following:

C.2.2.2.2.1 The Contractor shall process all manned aircraft-collected EO imagery following established SOPs.

C.2.2.2.2 2 The Contractor shall process the EO data in no more than 72 hours for the BE system, the BE system with advanced sensors, and the BE II system using GOTS and COTS GFE software

C.2.2.2.2.3 The Contractor shall maintain sufficient hardware at OCONUS locations to meet production demands, perform quality control, and maintain lab hardware and software.

C.2.2.2.2.4 The Contractor shall have a capability to process EO data using computer equipment and personnel located at the flight operations base.

C.2.2.2.2.5 The Contractor shall provide color-balanced, georegistered, orthorectified images from the individual camera frames in MrSID format.

C.2.2.2.2.6 The Contractor shall provide color-balanced, georegistered, orthorectified wide area image mosaics in MrSID, GeoTIFF, and JPEG2000 NITF format.

C.2.2.2.3 The Contractor shall maintain the software used for LIDAR and EO processing, to include bug fixes and performance improvements to contractor-furnished and government-furnished software, maintaining maintenance subscriptions to all COTS software used, recursion testing of new COTS software releases, and installation of new COTS software releases as deemed appropriate. Annual COTS software maintenance subscriptions shall include the following, at a minimum:

Vendor	Description	Quantity	Estimated Annual Cost
Applied Imagery	Quick Terrain Modeler	80	$50,362.50
Applanix	Maint - Ortho Vista INPHO	52	$53,040.00
Applanix	Ext Maint - INPHO	4	$2,400.00
Applanix	Ext Maint GNSS - Inertial w/SB POSPac	27	$48,098.61
Applanix	Maint GNSS-Inertial w/SB POSPac	1	$1,781.39
Applanix	Maint Photogrammetry Tool Set to ATG	4	$7,030.00
Applanix	Maint, DSS Tool Set	3	$1,068.99
Applanix	Maint, Rapid Ortho Image	3	$2,807.01
BAE Systems	SOCET GXP eXtreme Analysis Bundle UE	12	$42,000.00
BAE Systems	SOCET GXP Pro Bundle UE	4	$24,300.00
Bentley	MicroStation SELECT Subscription	32	$27,362.40
Celartem/Lizardtech	GeoExp 9 Unmlmt Support	14	$19,635.00
Celartem/Lizardtech	GeoExp 9 Unl Support -Floating	5	$9,843.75
Celartem/Lizardtech	GeoExpress 9 Unmlmt Support	3	$4,804.26
GeoCue Group	Terrasolid/TerraScan/TerraMatch/TerraModeler/TerraPhoto	26	$39,531.43
Leica Geosystems	CloudPro	TBD	TBD
Optech	ALTM-NAV	TBD	TBD
Optech	Lidar Mapping Suite	25	$31,750.00
Pixia Corporation	HiPER Look Server Plus Perpetual License (Maint)	6	$49,793.28
Pixia Corporation	HiPER LOOK Encoder (20TB) (Maint)	7	$167,860.00
Pixia Corporation	HiPER LOOK Encoder (10TB) (Maint)	2	$31,992.00
Trimech Solutions	SolidWorks Premium Subscription	1	$1,750.00
VisionMap	Lightspeed	3	$112,500.00
Waypoint/Trimble	Inertial Explorer	TBD	TBD

C.2.2.3 Platforms and Sensors Provision and Maintenance.

C.2.2.3.1 The Contractor shall provide and maintain manned fixed wing platforms to include the following:

C.2.2.3.1.1 Contractor Furnished Manned Fixed Wing Platforms

C.2.2.3.1.1.1 The Contractor shall provide five (5) Federal Aviation Administration (FAA)–certified aircraft, fully modified and equipped to provide services as an airborne mapping platform and capable of continuously travelling 600 NM from its base of operations to its collection area, performing a one-hour on-station collection, and returning to base.

C.2.2.3.1.1.2 The Contractor shall provide two (2) Federal Aviation Administration (FAA)-certified aircraft, fully modified and equipped to provide services as an airborne mapping platform capable of continuously travelling 750 NM from its base of operations to its collection area, performing a one-hour on-station collection, and returning to base.

C.2.2.3.1.1.3 The Contractor shall provide one (1) FAA-certified aircraft, fully modified and equipped to provide services as an airborne mapping platform capable of continuously travelling 1,000 NM from its base of operations to its collection area, performing a four-hour on-station collection, and returning to base.

C.2.2.3.2 UAS Platforms

Note: The government will provide two Arrow UAS and one Ground Control Station (GCS), fully modified and equipped to provide services as an airborne mapping platform capable of conducting collection operations in the area of operations outlined in this PWS.

C.2.2.3.3 The Contractor shall assume total responsibility for the shipping and handling of the platforms and all other CFE required.

C.2.2.3.4 The Contractor shall provide all necessary ground support equipment and auxiliary support services required to perform this PWS.

C.2.2.3.5 The Contractor shall develop and document a sparing strategy for the platforms. This sparing strategy will include recommendations for LRUs at the bases of operations, and identification of long lead-time components and subassemblies to be procured and held at the Contractor's CONUS facility or other suitable location, CONUS or OCONUS.

C.2.2.3.6 The Contractor shall procure spare parts for the platforms in accordance with the sparing strategies.

C.2.2.3.7 The Contractor shall provide the personnel and equipment required to maintain the platforms.

C.2.2.3.8 The Contractor shall assume total responsibility for the maintenance and repair of the platforms, GCS (for UAS platforms), and all other CFE required to perform the required tasks.

C.2.2.3.9 The Contractor shall integrate the GFE sensors to the aircraft platforms.

C.2.2.3.10 The Contractor shall maintain the Airborne LIDAR Systems as follows:

C.2.2.3.10.1 The Contractor shall check and maintain a current calibration for installed LIDAR sensors. The Contractor shall perform the calibration adjustments upon installation of the GFE sensor into the aircraft and then on a monthly basis thereafter.

C.2.2.3.10.2 The Contractor shall procure annual warranty or maintenance plans for each of the GFE LIDAR sensors.

C.2.2.3.10.3 The Contractor shall monitor GFE sensor health and data quality.

C.2.2.3.10.4 The Contractor shall follow SOPs based upon the LIDAR systems manufacturer and recommended maintenance schedule.

C.2.2.3.10.5 The Contractor shall develop and document a sparing strategy for the LIDAR sensors. This sparing strategy will include recommendations for LRUs at the bases of operations, and identification of long lead-time components and subassemblies to be procured and held at the Contractor's CONUS facility or other suitable location, CONUS or OCONUS.

C.2.2.3.10.6 The Contractor shall procure spare parts for the LIDAR sensors in accordance with the sparing strategies.

C.2.2.3.11 The Contractor shall maintain the Airborne EO Systems as following:

C.2.2.3.11.1 The Contractor shall monitor EO sensor health and data quality.

C.2.2.3.11.2 The Contractor shall procure annual warranty or maintenance plans for each of the GFE EO sensors.

C.2.2.3.11.3 The Contractor shall follow SOPs based upon the EO systems manufacturer and recommended maintenance schedule.

C.2.2.3.10.4 The Contractor shall develop and document a sparing strategy for the EO sensors. This sparing strategy will include recommendations for LRUs at the bases of operations, and identification of long lead-time components and subassemblies to be procured and held at the Contractor's CONUS facility or other suitable location, CONUS or OCONUS.

C.2.2.3.10.5 The Contractor shall procure spare parts for the EO sensors in accordance with the sparing strategies.

C.2.2.4 Dissemination, Storage, and Maintenance

C.2.2.4.1 The Contractor shall deliver all processed data on hard drives to the designated Government CONUS location and representative.

C.2.2.4.2 The Contractor shall provide personnel for the OCONUS dissemination of manned airborne LIDAR/EO products as required by the Government. The Contractor shall communicate with local NGA and other Government representatives to organize the rapid delivery into their established dissemination systems.

C.2.2.4.3 The Contractor shall provide personnel for the OCONUS dissemination of unmanned airborne LIDAR/EO products as required by the Government. The Contractor shall communicate with local NGA and other Government representatives to organize the rapid delivery into their established dissemination systems.

C.2.3 Terrestrial Platform Collection and Processing

The Contractor shall provide technical, management, engineering, maintenance, testing, training, and operational support to support the Government in the execution of terrestrial operational missions.

C.2.3.1 Sensor Operation and Data Collection

C.2.3.1 1 The Contractor shall operate the terrestrial system to ensure the resolution of the collected data is at least five (5) centimeters for LIDAR and ten (10) centimeters for EO.

C.2.3.1.2 The Contractor shall be able to collect terrestrial data at least three (3) days per month for four (4) hours per day at 25 km/hour (100 km per day).

C.2.3.2 Geospatial Data Processing

C.2.3.2.1 The Contractor shall have a capability to process EO and LIDAR data using computer equipment and personnel located at the operations base.

C.2.3.2.2 The Contractor shall process terrestrial LIDAR and EO data following established SOPs.

C.2.3.2.3 The Contractor shall process the LIDAR data in no more than 12 hours and the EO data in no more than 24 hours.

C.2.3.2.4 The Contractor shall produce colorized LIDAR point clouds (X, Y, Z, R, G, B) in LAS 1.2 format.

C.2.3.2.5 The Contractor shall produce grayscale LIDAR point clouds (X, Y, Z, I) in LAS 1.2 format.

C.2.3.2.6 The Contractor shall produce images co-collected during LIDAR capture in .JPG format.

C.2.3.3 Terrestrial System Platform and Sensor

C.2.3.3.1 The Contractor shall install, test, and operate the GFE Optech LYNX LIDAR/EO system on Government-provided vehicles.

C.2.3.3.2 The Contractor shall monitor Optech LYNX LIDAR/EO sensor health and data quality.

C.2.3.3.3 The Contractor shall follow SOPs based upon the Optech LYNX LIDAR/EO systems manufacturer and recommended maintenance schedule.

C.2.3.4 Dissemination, Storage, and Maintenance

C.2.3.4.1 The Contractor shall deliver all processed data on hard drives to the designated Government CONUS location and representative.

C.2.3.4.2 The Contractor shall provide personnel for the OCONUS dissemination of terrestrial LIDAR/EO products as required by the government. The Contractor shall communicate with local NGA and other Government representatives to organize the rapid delivery into their established dissemination systems.

C.2.4 Airborne Mapping Systems Mobilization Remobilization:

C.2.4.1 Mobilization

Mobilization is the process of preparing platforms, sensors, processing hardware and software, associated equipment, and personnel to mission ready status at a base of operations, typically OCONUS.

C.2.4.1.1 The Contractor shall communicate with the Government in order to organize, schedule, and receive CRC or equivalent training.

C.2.4.1.2 The Contractor shall place orders for all materials required for initial missions and expedite long lead material items.

C.2.4.1.3 The Contractor shall conduct PDSSs for all sites and identify any available GSE to potentially receive aircraft early.

C.2.4.1.4 The Contractor shall pack and ship by commercial air transportation all pallets and CONEX containers for shipment containing spares, GSE, tools, UAS platforms, and UAS ground control station.

C.2.4.1.5 The Contractor shall receive all procured items at its CONUS facilities.

C.2.4.1.6 The Contractor shall ship boxes and pallets containing all data processing equipment, aircraft spare parts, sensor spare parts, and all other required equipment and materials.

C.2.4.1.7 The Contractor first-rotation deploying team shall receive CRC or equivalent training.

C.2.4.1.8 The Contractor shall ensure all GSE is organized and ready for aircraft arrival.

C.2.4.1.9 The Contractor shall receive all data processing equipment, aircraft spare parts, sensor spare parts, and all other required equipment and materials at the OCONUS sites.

C.2.4.1.10 The Contractor shall ferry the fixed wing aircraft to theater.

C.2.4.1.11 The Contractor's first-rotation deploying team shall arrive at the OCONUS sites with adequate time to begin operational missions on the required date.

C.2.4.1.12 The Contractor shall receive the aircraft at the OCONUS sites.

C.2.4.1.13 The Contractor shall prepare the OCONUS sites to full operational state.

C.2.4.1.14 The Contractor shall install the GFE sensors on the aircraft and the terrestrial vehicle.

C.2.4.1.15 The Contractor shall ensure that all personnel have the appropriate in-theater orientation and training.

C.2.4.1.16 The Contractor shall ensure the flight operations personnel hold the necessary flight qualifications.

C.2.4.1.17 The Contractor shall provide support to the host command to ensure the aircraft are released for flight operations.

C.2.4.1.18 The Contractor shall begin the HR3DGI data collection and processing at the OCONUS sites within sixty (60) days of contract award.

C.2.4.2 Remobilization

Remobilization is the process of moving the platforms, sensors, processing hardware and software, associated equipment, and personnel from one location to another and preparing them to mission ready status.

C.2.4.2.1 Phase I— Redeployment of the aircraft and onboard sensors and mission equipment as follows:

C.2.4.2.1.1 The Contractor shall develop a detailed remobilization plan

C.2.4.2.1.2 The Contractor shall update the remobilization plan at least weekly during remobilization.

C.2.4.2.1.3 The Contractor shall de-install the GFE sensors and other equipment as required and prepare the aircraft for ferry.

C.2.4.2.1.4 The Contractor shall arrange the flight plan and diplomatic clearances.

C.2.4.2.1.5 The Contractor shall provide pilots and ferry the aircraft to the destination site.

C.2.4.2.1.6 The Contractor shall complete Phase I within 14 days of remobilization initiation or as required.

C.2.4.2.2 Phase II— Inventory, packing, and arranging transportation to include the following:

C.2.4.2.2.1 The Contractor shall initiate an inventory of all equipment and materials to be remobilized.

C.2.4.2.2.2 The Contractor shall recommend equipment not required to be returned to CONUS or reused at a new site, and develop a plan for accounting for and turning over the equipment to the appropriate groups in-theater.

C.2.4.2.2.3 The Contractor shall load the equipment and materials onto pallets and into CONEXs.

C.2.4.2.2.4 The Contractor shall organize transportation and ensure that all customs procedures are met for shipping the equipment.

C.2.4.2.2.5 The Contractor shall redeploy personnel to the destination site.

C.2.4.2.2.6 The Contractor shall complete Phase II within thirty (30) days of remobilization initiation or as required.

C.2.4.2.3 Phase III—Inventory, HAZMAT, and transportation: This phase is completely dependent on the availability of Government HAZMAT and shipping inspectors and on military and commercial transportation. A planning time for completion is the thirty (30)-day to sixty (60)-day mark.

C.2.4.2.3.1 The Contractor shall complete the inventory initiated in Phase II.

C.2.4.2.3.2 The Contractor shall organize HAZMAT inspections.

C.2.4.2.3.3 The Contractor shall ensure that all sensitive equipment and information are properly packaged and shipped by an approved means.

C.2.4.2.3.4 The Contractor shall ship CONEXs and pallets.

C.2.4.2.3.5 The Contractor shall redeploy personnel to the destination site.

C.2.5 Transition

C.2.5.1 The Contractor shall ensure operational capability NLT sixty (60)-days post award, in the required theater and countries, with associated GFE/GFP, approvals/accreditation, and necessary deployed and CONUS personnel.

C.2.5.2 The Contractor shall develop a Transition Plan for the aircraft and onboard sensors and mission equipment as well as personnel and GFI/Contractor Acquired Property accountable to this contract that includes the following:

C.2.5.2.1 The Contractor shall include a detailed schedule for all actions included in the Transition Plan.

C.2.5.2.2 The Contractor shall include a plan to de-install the GFE sensors and other equipment and prepare the aircraft for ferry for aircrafts that are required to be relocated during the transition effort as required.

C.2.5.2.3 The Contractor shall include the plan to arrange the flight plan and diplomatic clearances for aircrafts that are required to be relocated during the transition effort as required.

C.2.5.2.4 The Contractor shall include the plan for inventory/packing/arranging transportation for all GFE/CAP.

C.2.5.2.5 The Contractor shall include in the plan the method for inventory / disposition of / inspection of Hazardous Materials (HAZMAT).

C.2.5.2.6 The Contractor shall include in the plan the method for the disposal/transfer of all sensitive equipment and information.

C.2.5.2.7 The Contractor shall include in the plan a detailed approach for delivering a comprehensive closeout report to the Government outlining the entire operation from start to finish.

C.2.5.2.8 The Contractor shall include in the plan the method for ensuring all employee badges (including subcontractor employees), CACs, and other Government credentials issued under this contract are returned to the local Access Control Badging Office for deactivation and destruction.

C.2.6 Advanced Sensor Analysis, Test, and Evaluation

C.2.6.1. The Contractor shall develop test procedures and success criteria for advanced mapping sensors, as required, to include the Buckeye II sensor. These procedures shall test for capabilities such as LIDAR gain for high fidelity rooflines and best object resolution; EO resolution in object space; Swath width at 25000 ft AGL; LIDAR auto range gate functionality; Vibration Analysis of LIDAR and EO; Sun angle impact to EO; Ground speed tests; Absolute vertical accuracy; Absolute horizontal accuracy; Non-cardinal direction collection; Race track pattern collection; Noncontiguous/multi-day collection; Determination of minimal acceptable sidelap; Characterize envelope for acceptable AGL; Evaluate use of rapid vs. final PPP for GPS correction information; Perform and evaluate collections in the following region types: urban, desert, heavy foliage, littoral.

C.2.6.2 The Contractor shall execute the aforementioned tests.

C.2.6.3 The Contractor shall prepare and deliver a test report. The test report shall contain a remediation plan to correct any critical deficiencies in the sensor, processing or CONOPS that are judged critical to mission success. The Contractor shall deliver an interim test report and a final test report in accordance with the dates specified in the deliverable table located in Section C.7 of this solicitation.

C.2.6.4 Prior to operational deployment of a new sensor, the Contractor shall collect and process CONUS data at every available opportunity. The contractor shall collect and analyze data to estimate and improve operational readiness, operational availability, MTBF on a configuration item (CI) basis and a LRU basis, MTTR on a CI basis and a LRU basis.

C.2.6.5 As directed by AGC, the Contractor shall conduct trade studies of new sensors, to include analysis, laboratory tests, flight tests, and data processing tests.

C.2.7 Sensor Processing Algorithm and Software Development, Enhancement, and Maintenance

C.2.7.1 As directed by AGC, the Contractor shall develop new or enhanced sensor processing algorithms and implement them in the processing software.

C.2.7.2 As directed by AGC, the Contractor shall enhance and/or maintain the sensor processing software to increase reliability, robustness, performance efficiency, automation levels, product quality, maintainability, or other attributes as identified by AGC.

C.2.8 CONUS Training

C.2.8.1 The Contractor shall establish and maintain the capability to train qualified personnel for any deployed collection, processing, or leadership position. Note: This includes the training and certification of aircraft pilots and technicians for the UAS.

C.2.8.2 The Contractor shall train qualified personnel for any deployed position as required.

C.2.9 Other CONUS Support

C.2.9.1 The Contractor shall provide other CONUS support to the program as required. This includes, but is not limited to, quality assurance of delivered products, rework of deficient products, surge data processing when the operational collection outpaces the site-based processing, and refinement of delivered products by HITL value-added processing (e.g., LIDAR bare earth extraction, EO radiometric matching).

C.3 PROGRAM MANAGEMENT TASKS

C.3.1 Program Management Reporting

C.3.1.1 The Contractor shall provide accurate and timely schedule and performance information throughout the life of the program.

C.3.1.1.2 The Contractor shall provide a CWBS and update if necessary.

C.3.1.1.3 The Contractor shall provide an IMS and update it monthly.

C.3.2 Risk Management

C.3.2.1 The Contractor shall establish a risk management system through the integration of metrics to monitor program status in order to mitigate program risks and provide for special emphasis on software development efforts.

C.3.3 Configuration Management

C.3.3.1 The Contractor shall establish a comprehensive configuration management system for equipment, spares, repairs, COTS and GOTS software versions, schedule, WBS, IMS, risk register, raw sensed data, and processed data products.

C.3.4 The Contractors shall provide three Key Personnel: Program Manager, Chief Engineer, and Chief Pilot.

C.3.4.1 Program Manager

C.3.4.1.1 the Program Manager (PM) is responsible for the performance of the requirements of this PWS. The Contractor shall ensure the PM has full authority to act for the Contractor on all matters pertaining to performance of this PWS.

C.3.4.1.2 The Contractor shall ensure the PM is responsible for ensuring compliance with all local, CENTCOM, and other requirements that are provided as GFI.

C.3.4.2 Chief Engineer

C.3.4.2.1 The Chief Engineer shall lead trade studies, test, evaluation, and integration activities as directed by AGC to maintain the long-term sustainment of AGC's airborne mapping data production. The most promising technologies will be rigorously tested in the laboratory, flight, and operational environments, and, ultimately, may be integrated into the operational systems. The Chief Engineer may lead the integration of existing GFE sensor(s) on new platform(s), integration of advanced sensors into new or existing platforms, and trade studies of the new technologies

C.3.4.3 Chief Pilot

C.3.4.3.1 The Chief Pilot will supervise all aircraft personnel, including pilots, mechanics, technicians, and sensor operators. In coordination with the Program Manager and Site Leads, the Chief Pilot is responsible for defining, communicating and enforcing the policies and procedures related to flight operations as well as the readiness of the personnel while off duty.

C.3.5 Personnel Management

C.3.5.1 The Contractor shall recruit, vet, prepare, hire, train, replace, and retain personnel to ensure the appropriate background, knowledge, and skills for the performance of this contract are met.

C.3.5.2 The Contractor shall provide for transportation and rotation of personnel.

C.3.5.3 The Contractor shall develop and test procedures for evacuation; notification of next of kin; and continued care for personnel injured, wounded, or killed while performing contract duties and shall apply those procedures as required.

C.3.5.4 The Contractor shall deploy into contingency areas of operation, when required by the Government, or combat zones to provide onsite technical expertise, operational support, or training on proper utilization of Government capabilities and services. The Contractor shall comply with all rules and regulations concerning deployment and re-deployment. The Government and Contractor will review the daily threat and intelligence reports for the specific areas of interest we are deployed to as part of the daily operations planning. The Government and Contractor will come to mutual determination whether to conduct operations based on these reports and the associated operations / mission profile.

C.3.5.5 The Contractor shall ensure that all deployed personnel are processed through a CRC or similar approved replacement center, as required in accordance with DoD guidance.

C.3.5.6 The Contractor shall ensure employees performing services under this contract are controlled, directed, and supervised at all times by management personnel of the Contractor.

C.3.5.7 The Contractor's management shall ensure that employees properly comply with the performance standards outlined in this PWS and as required by the Contracting Officer or the COR.

C.3.5.8 The Contractor employees shall perform independent of and without the supervision of any Government official.

C.3.6 Quality

C.3.6.1 The Contractor shall develop and use a process for testing data quality.

C.3.6.2 The Contractor shall develop and use data quality and other metrics to assess and demonstrate the effectiveness of the technical approach.

C.3.6.3 The Contractor shall develop and use a process for collection and analysis of lessons learned.

C.3.6.4 The Contractor shall use QC and QA procedures to ensure proper oversight for personnel, training, facilities, equipment, supplies, services, and subcontractors.

C.4 GOVERNMENT FURNISHED INFORMATION, EQUIPMENT AND SERVICES

The Contractor shall furnish everything required to perform the requirements of this PWS except for the items listed below that will be provided by the Government. The Contractor shall furnish the following equipment: Eight (8) FAA-certified aircraft that meet the HR3DGI operational requirement and support equipment to maintain the safe operation of the aircraft. The COR will provide the following at or by contract commencement:

C.4.1 The Government will provide the following information:

C.4.1.1 Location where each system will be based at contract award if known, or as soon as notified by customer after contract award.

C.4.1.2 DD 1423 to be provided upon contract award.

C.4.1.3 DoD flight information publications, updates, and supplements appropriate to the area of operations thirty (30) days after contract award

C.4.1.4 A LOA for Contractor personnel to permit attendance at a CRC or similar approved replacement center, in accordance with DoD guidance. The LOA will validate, at a minimum, their Contractor employment, GS equivalency (GS 12 or 13), and authority to process within twenty (20) days of contract award.

C.4.1.5 Applicable installation, facility, and area commander installation and facility access and local security policies and procedures upon deployment date.

C.4.1.6 Requirements for AOR–specific AT awareness training and local deployment requirements and documentation. The COR will provide this information (required training, country clearance requirements, and local deployment requirements and documentation) as GFI at contract award.

C.4.1.7 Local AT/OPSEC policies, including required compliance with laws and regulations, pre-deployment requirements, required training (per combatant command guidance), and personnel data requirements provided by the COR as GFI at contract award.

C.4.1.8 Country and theater clearance requirements and combatant commander and subordinate task force commander policies and directives provided by the COR as GFI at contract award.

C.4.1.9 Specific requirements that must be met for access to Government information systems as GFI at contract award.

C.4.2 The Government will provide the following equipment:

C.4.2.1 The Government will provide all required sensors, including:

- Six (6) Optech ALTM LIDAR sensors at deployment site no later than sixty (60) days from contract award
- Two (2) Sigma Space LIDAR sensors at deployment site no later than sixty (60) days

from contract award

- Three (3) Optech ALTM Orion H300 LIDAR sensors at deployment site no later than sixty (60) days from contract award
- Sixteen (16) KEYW EO 1C+ Framing Cameras at deployment site no later than sixty (60) days from contract award
- Three (3) Vision Map Mapping Cameras at deployment site no later than sixty (60) days from contract award
- One (1) Optech LYNX Mobile Mapping LIDAR/EO system at deployment site no later than sixty (60) days from contract award
- Optionally, one or more advanced technology COTS linear-mode LIDAR sensors (e.g., Leica ALS80-HA) for testing or upgrades of existing sensors.
- Optionally, one or more advanced technology COTS EO sensors (e.g., KEYW Aeroptic Mapping System) for testing or upgrades of existing sensors.

C.4.2.1 The Government will provide two (2) Arrow UAS and Ground Control Stations (GCS), fully modified and equipped to provide services as an airborne mapping platform.

C.4.2.2 All GOTS and COTS software that is required for use in operation of the system. It has been established that this software is compatible with Government-approved networks and flight systems. GOTS software items include:

Developer	Software
GIA	Normalize.exe
GIA	EGM08 converter
GIA	Geoid09 Converter
Johns Hopkins APL	BuckeyeApp.exe (EO automated alignment software)
Leidos	DiskExtract
Leidos	LASupdater
Leidos	Image normalization software
Leidos	Buckeye GDAL application for downsampling images
Leidos	GPU-Ortho.exe
Leidos	Generate orthophotos in KML format
Leidos	Fill Nulls utility
USACE	HyperCube
Woolpert	TOFRCLI, TOFRUTILS, boresight, AdjustSBET_GPS

COTS software items include those items listed in Section C.2.2.2.3 and those in the following list:

Vendor	Software
Adobe	Lightroom
Kakadu	kdu_compress.exe
ERSI	ArcMap
Novatel	Waypoint
BlueMarble	GlobalMapper

C.4.2.3 Eight (8) PRC-117 radios at deployment sites no later than sixty (60) days from contract award.

C.4.2.4 ALTM software and any other ITAR-restricted equipment or information at the operating sites at deployment site no later than sixty (60) days from contract award.

C.4.2.5 Vehicle for the installation of the terrestrial LIDAR sensors that can operate in any environment such as an active combat zone where continuing contingency operations are ongoing at deployment site no later than three (3) days prior to start of terrestrial collection.

C.4.3 The Government will provide the following services and facilities:

C.4.3.1 Mission scheduling and planning sufficient to allow Air Operations Center airspace coordination and ATO development within 72 hours prior to mission.

C.4.3.2 Coordination with Tactical Air Control facilities for emergency or pop-up mission requirements within twelve (12) hours of mission

C.4.3.3 Access to CF weather facilities daily prior to mission.

C.4.3.4 Access to mission profile intelligence briefing for threat identification and assessment daily prior to mission

C.4.3.5 Access to CF airfields as required for mission performance daily prior to mission.

C.4.3.6 Flight oversight of all airspace and aviation procedures by the OCONUS TM or designated equivalent daily prior to mission.

C.4.3.7 Flight profiles that will avoid areas where hostile air threat activities are known to exist or are anticipated to occur based on current threat assessments provided daily prior to mission.

C.4.3.8 A secure base of operations daily from start to finish of deployment.

C.4.3.9 The Government will provide all necessary utilities (e.g. water, power, fuel) to support operations in areas where they are not commercially available to the contractor daily from start to finish of deployment.

C.4.3 10 Housing and office locations at forward deployed locations while operating in areas where these items are not commercially available daily from start to finish of deployment.

C.4.3.11 A secure OCONUS facility for any data processing of classified data daily from start to finish of deployment.

C.4.3.12 Adequate office space that includes adequate power supply and cooling for Contractor personnel who are required to work onsite at Government facilities as part of performing this effort daily from start to finish of deployment.

C.4.3.13 The Government will provide adequate security for personnel, aircraft, and the terrestrial collection system when operating in any environment such as an active combat zone where continuing contingency operations are ongoing daily from start to finish of deployment.

C.4.3.14 A group CRC class (or equivalent) to begin no later than Day 30 of the initial sixty (60)-day transition.

C.4.3.15 OCONUS HAZMAT and shipping inspectors as required for remobilization thirty (30) days from final date of remobilization.

C.4.3.16 Military transport as required for mobilization, remobilization, and shipment of spares and equipment depending upon the theater of operations as required.

C.5 MEETINGS

C.5.1 Kick-Off Meeting: The Contractor shall conduct a Kick-Off Meeting two (2) weeks after contract award telephonically, at AGC in Alexandria, VA or at the Contractor's facility.

C.5.2 Program Management Review Meetings: The Contractor shall conduct Program Management Reviews monthly telephonically, at AGC in Alexandria, VA or at the Contractor's facility.

C.5.3 Weekly Status Review: The Contractor shall conduct weekly technical status updates telephonically with the COR and in-theater Government representatives.

C.6 DOCUMENTATION

The Contractor shall deliver to the COR all documents and materials as deliverables developed under this effort for inspection and acceptance. The Contractor shall provide all document deliverables in hard copy, submitted via electronic disk, or secure communications in accordance with the DD1423. The Contractor shall document all work performed under this effort as follow:

C.6.1 The Contractor shall provide monthly reports on the 10th day of each month beginning the month after contract award. The Contractor shall deliver the monthly status reports via secure communications to the COR on the tenth day of each month after contract award. The Contractor shall provide monthly status reports summarizing current program accomplishments measured against the tasks outlined previously, identification and summary of any unresolved problems, incurred costs, meetings attended, planned activities for the next month, issues, and recommendations. The Contractor shall ensure the monthly report includes a spending plan for the period of performance; actual expenditures to date; actual expenditures for the month just ended; and monthly and cumulative variation of actual expenditures from the planned expenditures. The Contractor shall include in the spending plan all costs to include labor, overhead expenses, description (to include cost and results obtained) of each trip taken in the previous month, and fees. The Contractor shall include detailed copies of all invoices submitted to date for payment from both the Prime Contractor as well as all Sub

Contractors. The Contractor shall ensure each invoice details the labor categories, labor rates, labor hours, and all Other Direct Costs (ODCs). The Contractor shall also answer the following questions within the monthly reports:

- Is the job progressing on schedule?
- What is the percent of completion?
- What is the dollar value completed?
- What is the total number of contract employees currently on contract?
  What is the total number of new employees placed on contract this month?
- Was Contractor Manpower Reporting (CMR) performed during the monthly reporting period? If so, what information was entered?
- What are names of the Contractor personnel, who are/were deployed during the period covered by this monthly report?

C.6.2 The Contractor shall provide to the COR a weekly status report.

C.6.3 The Contractor shall provide daily maintenance reports that adhere to the following:

- The Contractor shall provide daily maintenance reports (by fax or secured email transmission) to the COR and any other TPOC each day not later than 1700 deployment site time.
- The Contractor shall ensure the daily maintenance report contains any adjustments and changes that are made to the system, current airframe and system readiness and logistics issues, upcoming TBO replacements, Programmed Maintenance Schedule, estimated FMC dates for inoperable aircraft or systems, and the status of all deployed personnel and equipment.

C.6.4 The Contractor shall provide to the COR an accident report and a serious incident and compliance report no later than one (1) day after an accident or serious incident.

C.6.5 Final Report: The Contractor shall submit a draft Final Report one (1) month prior to the end of the contract to the COR for review. The COR will review the draft Final Report within two (2) weeks. The Contractor shall provide a revised Final Report based on COR comments one (1) week prior to the end of the contract.

C.6.6 The Contractor shall submit a Property Control Plan to the COR upon contract award.

C.6.7 The Contractor shall submit a Transition Plan to the COR upon contract award.

C.6.8 The Contractor shall submit an OPSEC plan to the COR upon contract award.

C.7 DELIVERABLES

Number	Deliverable	Delivery
A001	LIDAR Point Clouds	As requested by the COR

A002	DEM	As requested by the COR
A003	Bare Earth DEM	As requested by the COR
A004	LIDAR Intensity Image	As requested by the COR
A005	Individual Image Orthophotos	As requested by the COR
A006	Orthophoto Mosaics	As requested by the COR
A007	Terrestrial LIDAR Point Clouds with RGB	As requested by the COR
A008	Terrestrial LIDAR Point Clouds with Intensity	As requested by the COR
A009	Terrestrial Images	As requested by the COR
A010	Flight Records and Mission Reports	By 10th day of each calendar month
A011	Maintenance Report	Per Maintenance Event
A012	Monthly Status Reports	By 10th day of each calendar month
A013	Weekly Status Reports	Weekly
A014	Daily Maintenance Report	Daily
A015	Final Report	Draft – one(1) month prior to the end of the contract Final – one (1) week prior to the end of the contract
A016	Property Control Plan	Within one (1) week after contract award
A017	Transition Plan	Within one (1) week after contract award
A018	OPSEC Plan	Within one (1) week after contract award
A019	Presentation Materials	As requested by the COR
A020	Accidents, Serious Incidents, and Compliance Reports Incidents, and Compliance Reports	No later than one (1) day after event
A021	Remobilization Plan	Within one (1) week after the exercise of option four (4)
A022	Quality Control Plan	Within 30 Days of Contract Award
A023	Interim Advanced Sensor Test Report (See Sec. C.2.6)	Six (6) months after contract award
A024	Final Advanced Sensor Test Report (See Sec. C.2.6)	Six (12) months after contract award

The Government shall have up to thirty (30) calendar days to complete the review of each deliverable submitted, and accept or provide comments regarding the deliverable in writing. All written comments received by Leidos shall be incorporated into the final deliverable and resubmitted to the Government within ten (10) working days after receipt.

C.8 TRAVEL

To the maximum possible extent, the Contractor shall provide electronic media over existing secure high bandwidth or other secure communications links rather than by Contractor travel. The Contractor shall travel between the Contractor's facility and OCONUS locations as required to carry out the tasks specified in this PWS.

C.9 SECURITY

C.9.1 The Contractor shall maintain at least a Top Secret Facility Clearance and make available approved Secret storage sufficient to accommodate the needs of this PWS.

C.9.2 The Contractor shall provide personnel who have clearances in place, enabling the capability for the Government to authorize access to Sensitive Compartmented Information (SCI).

C.10 DISTRIBUTION STATEMENT E

The Contractor shall distribute all information generated from this PWS in accordance with the following distribution statement:

Distribution authorized to DoD Components only (Administrative / Operational Use) (10 January 2013). Other requests shall be referred to GSA.

C.11 AT/OPSEC REQUIREMENTS

C.11.1 Contractor employees and all associated subcontractors' employees requiring access to Army installations, facilities and controlled access areas shall complete AT Level I awareness training within 14 calendar days after contract start date or the effective date of incorporation of this requirement into the contract, whichever is applicable. AT level I awareness training is available at the following website: https://atlevel1.dtic.mil/at. The contractor shall submit certificates of completion for each affected contractor employee and subcontractor employee to the COR within seven calendar days after completion of training by all employees and subcontractor personnel. This includes new contractor employees as they are assigned.

C.11.2 Contractor employees and all associated subcontractor employees shall comply with applicable installation, facility and area commander installation / facility access and local security policies and procedures (provided by the COR as GFI at contract start date or effective date of incorporation of this requirement into the contract, whichever is applicable) such as wearing of ID Badges, etc. The contractor shall also provide all information locally required for background checks to meet installation access requirements to be accomplished by the installation Provost Marshal Office, Director of Emergency Services or Security Office. Contractor workforce must comply with all personal identity verification requirements as requested by the COR based on DOD, HQDA and/or local policy. In addition, should the Force Protection Condition (FPCON) at any individual facility or installation change, the COR may require changes in contractor security matters or processes. During FPCON Charlie and Delta and other required postures such as a Lockdown, Shelter In Place or Evacuation, contractor employees will resume work as soon as possible after the FPCON has been lowered or the posture returned to normal operations. This pertains to real situations and exercises.

C.11.3 The Contractor and all associated subcontractors shall ensure that all their employees participate in local training as required by the COR based on the local Anti-Terrorism Officer (ATO) requirements, such as local iWatch training, to inform employees of the types of behavior to look out for and instruct employees to report suspicious activity to the COR.

C.11.4 The Contractor and all associated subcontractors shall ensure that all local clearance procedures (i.e. return of ID badges provided by the COR as GFI at contract

start date or effective date of incorporation of this requirement into the contract, whichever is applicable) are followed for departing contractor employees and sub-contractor employees.

C.11.5 US-based contractor employees and associated subcontractor employees who will perform work OCONUS will receive area of responsibility (AOR) specific AT awareness training as directed by AR 525-13 and meet all country clearance requirements per the Personnel Policy Guidance (PPG) and local deployment requirements and documentation. The COR will provide information (required training, country clearance requirements and local deployment requirements / documentation) as GFI at contract start date or effective date of incorporation of this requirement into the contract, whichever is applicable.

C.11.6 Contractor employees and associated subcontractor employees, who are authorized to accompany US Armed Forces deployed outside the US in contingency operations; humanitarian or peacekeeping operations; or other military operations or exercises, when designated by the combatant commander, shall comply with local AT / OPSEC policies. These policies include required compliance with laws and regulations, pre-deployment requirements, required training (per combatant command guidance), personnel data requirements to address before deployment, and required documentation. The COR will provide these policies as GFI at contract start date or effective date of incorporation of this requirement into the contract, whichever is applicable.

C.11.7 Non-local national (not citizens of the foreign country of performance or delivery) contractor employees and associated subcontractor employees who are required to provide performance or delivery in a foreign country are to comply with country and theater clearance requirements and allow the combatant commander to exercise oversight to ensure the contractor's compliance with combatant commander and subordinate task force commander policies and directives. The COR will provide this information (requirements, policies and directives) as GFI at contract start date or effective date of incorporation of this requirement into the contract, whichever is applicable.

C.11.8 Contractors and all associated sub-contractors who will handle or have access to Classified Information are to be directed to analyze FAR 52.204-2, Security Requirements. This clause involves access to information classified "Confidential," "Secret," or "Top Secret" and requires contractors to comply with: The Security Agreement (DD Form 441), including the National Industrial Security Program Operating Manual (DoD 5220.22-M); and any revisions to DOD 5220.22-M, notice of which is to be provided by the COR as GFI at contract start date or effective date of incorporation of this requirement into the contract, whichever is applicable.

C.11.9 Contractor personnel and associated sub-contractor personnel who require access to Government Information Systems must successfully complete the DOD Information Assurance Awareness training, and all other mandatory IA training / forms, which are required by the Government Organization(s) that controls the system(s) that the Contractor requires access to, before accessing these Government information system(s). The DOD Information Assurance Awareness training must be completed annually thereafter. The COR will provide the Contractor with the specific

requirement(s) that must be met for access to these systems as GFI at contract start date or effective date of incorporation of this requirement into the contract, whichever is applicable.

End of PWS